

spinwriter[®]

**7700 TERMINALS
OPERATOR'S GUIDE**

NEC

NEC Information Systems, Inc.

819-000062-7002

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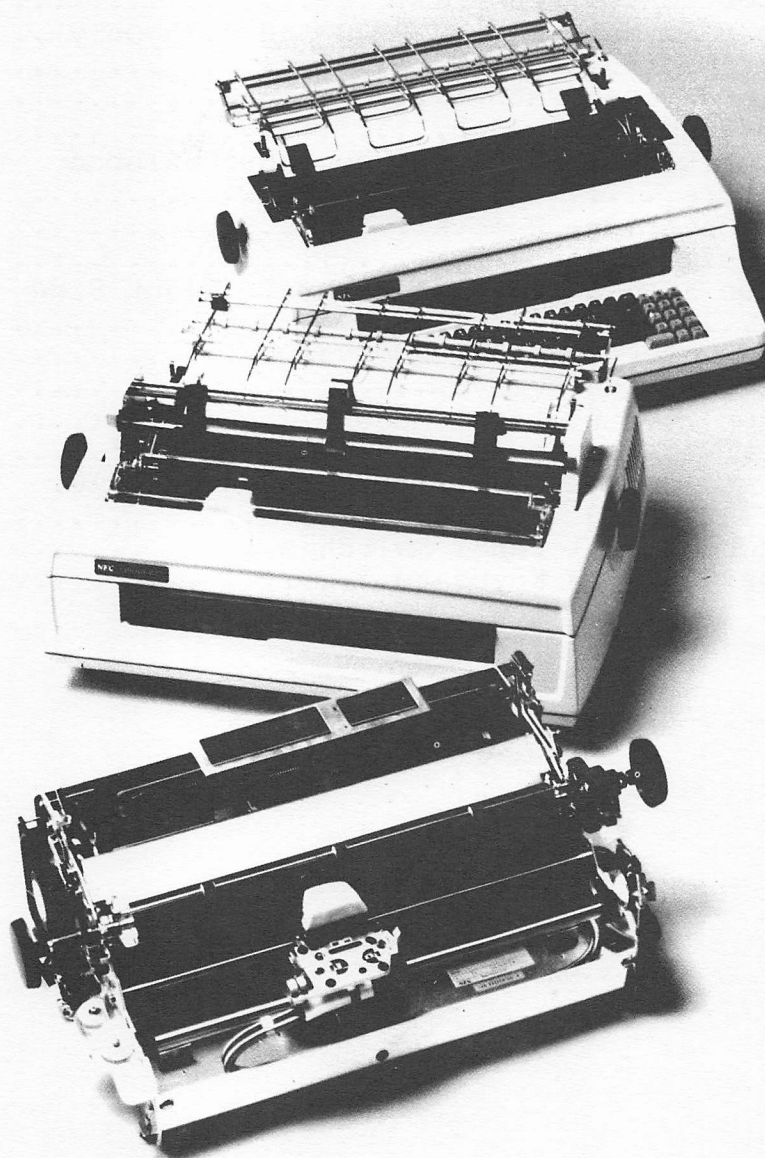
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CHAPTER 1

OPERATING INSTRUCTIONS

This chapter tells you how to operate the Spinwriter. It describes the control panel switches, indicators, and the keyboard functions. It gives you instructions on how to load the paper and position it, and outlines step-by-step procedures to run the machine. Specific operations vary with the model Spinwriter used and the options installed. However, you can use the general information provided here for almost all your needs.

The Spinwriter controls and external components are shown in Figure 1-1.

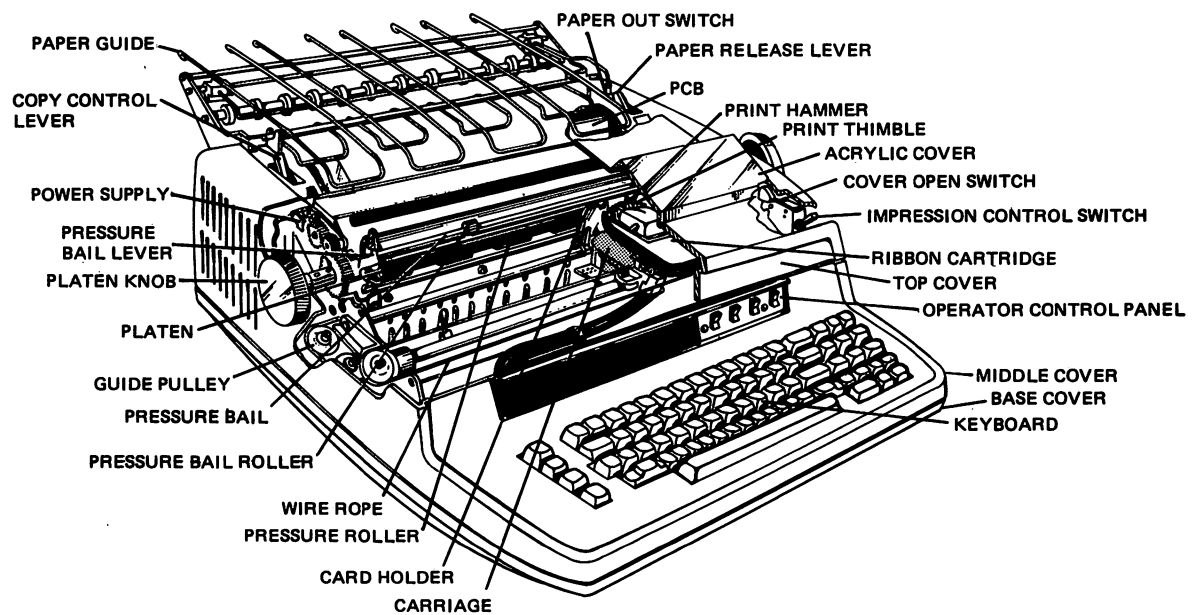
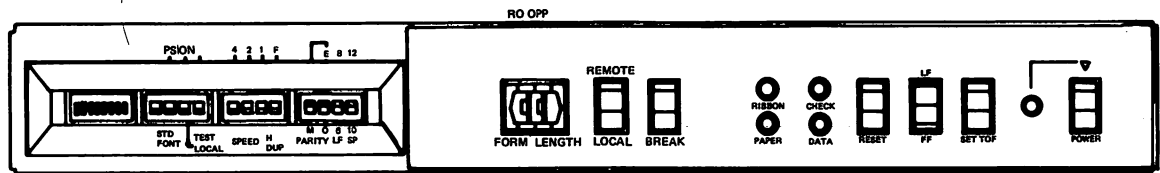


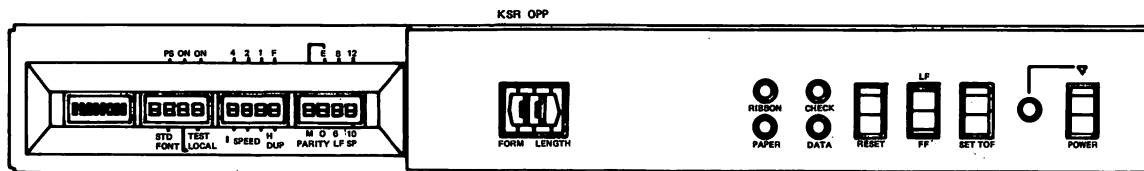
Figure 1-1 Spinwriter Controls and External Components

1.1 OPERATOR CONTROL PANEL

The operator control panels are shown in Figure 1-2. The controls and indicators on the control panel are listed in Table 1-1.



FOR MODELS 7710 AND 7715



FOR MODELS 7720 AND 7725

Figure 1-2 Operator Control Panels

Table 1-1 Operator Control Panel

PANEL LABEL	SWITCH/INDICATOR	FUNCTION
POWER	Two-Position Rocker Switch	Controls ac power to Spinwriter.
POWER	Indicator	Lights when ac power is applied.
SET TOF (Top of Form)	Spring-Loaded Rocker Switch	Stores contents of FORM LENGTH thumbwheel switches. NOTE: Position the paper at the first line before pressing this switch.
LF/FF	Spring-Loaded Rocker Switch	LF does a line feed. FF moves the paper to the top line of the next form.
CHECK	Indicator	Lights when an error occurs.
	Audible Alarm	Sounds for about 1/2 second when a bell code is received.

Table 1-1 Operator Control Panel (cont'd)

PANEL LABEL	SWITCH/INDICATOR	FUNCTION
DATA	Indicator	Lights when a data error occurs.
RIBBON	Indicator	Lights when a multistrike ribbon is used up.
PAPER	Indicator	Lights when the paper supply is used up.
RESET	Spring-Loaded Switch	Clears CHECK indicator if alarm condition is cleared.
REMOTE/LOCAL	Two-Position Rocker Switch	In REMOTE position, the Spinwriter receives and transmits data. In LOCAL position, the Spinwriter is offline and all data transmissions stop.
BREAK	Spring-Loaded Switch	Transmits BREAK code.
FORM LENGTH	Two 10-Position Thumbwheel Switches	1. Specifies form length - number of lines from 1 to 99. Read only when the printer is powered on and SET TOF is pressed. 2. When in self-printing test, the thumbwheel switch designation times 10 equals the column width for the self test (applies for settings 03 through 13).
SP	Two-Position Switch	Selects 10 or 12 CPI.
LF	Two-Position Switch	Selects 6 or 8 lines per inch line feed.
PARITY	Two 2-Position Switches	Selects even, odd, or mark parity.

Table 1-1 Operator Control Panel (cont'd)

PANEL LABEL	SWITCH/INDICATOR	FUNCTION
DUP	Two-Position Switch	Selects full or half duplex. At full duplex, data is transmitted but no local printing occurs. At half duplex, data is printed and transmitted.
SPEED	Three 2-Position Switches	Selects communication speed of 110, 150, 200, 300, 600, or 1200 baud.
OPTION	Two 2-Position Switches	Not used.
FONT	Two-Position Switch	Selects standard or proportional spacing.
TEST	Two-Position Switch	Generates self-tests. For Models 7720 and 7725, press and lock the LOCAL switch on the keyboard.

1.2 KEYBOARD (MODELS 7720 AND 7725 ONLY)

The Spinwriter keyboard is divided into three sections as shown in Figure 1-3: alphanumeric, control, and numeric.

1.2.1 Alphanumeric Section

Most of the keys in the alphanumeric section function like those on a typewriter. For example, when you press the SHIFT key or SHIFT LOCK key and any of the alphanumeric keys (letter or number), an uppercase character prints.

When you press and hold the SPACE, BACK SPACE, RETURN, LINE FEED, 0, -, or _ keys, the code automatically repeats until you release the key.

1.2.2 Control Section

Control (CTRL), Escape (ESC), LINE FEED, LOCAL, UC ONLY, AUTO LF, BREAK, and Delete (DEL) are special keys. Use the CTRL and ESC keys to vary normal printing operations, carriage movement, or paper movement. These keys are discussed in the following paragraphs.

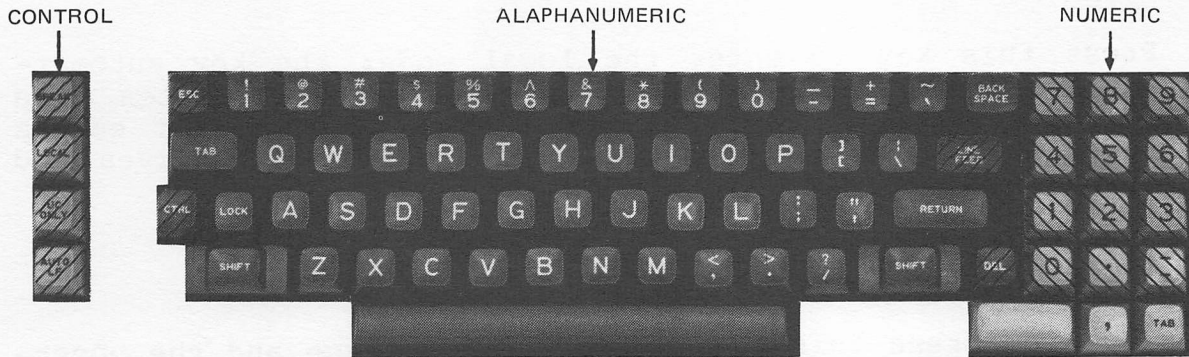


Figure 1-3 Keyboard Layout (Models 7720 and 7725 Only)

CTRL

The CTRL key, when used with another key, generates a special function or action. For example, when you press CTRL and J at the same time, a line feed occurs. When you press CTRL and K at the same time, a vertical tab occurs. You can also use the CTRL key for other functions (see Appendix C).

For CTRL key functions for Diablo-Compatible and Xerox-Compatible Plus, see Appendix C.

ESC

The ESC key also generates a special function or machine action when used with another key. For example, pressing ESC and M (m) at the same time sets the left margin.

Similarly, using the ESC key and other keys sets horizontal and vertical tabs (see Appendix B). To vary spacing between characters and between lines, use the ESC key as detailed in Appendix B.

For ESC key functions for Diablo-Compatible and Xerox-Compatible Plus, see Appendix B.

LINE FEED

Press the LINE FEED key to advance the paper by one line. No carriage return occurs unless AUTO LINE FEED has been selected internally.

LOCAL

Press this key to enter the local mode; the key automatically locks. In local mode, the Spinwriter operates as a typewriter. When you release this key, the unit enters remote mode. In remote mode, the Spinwriter receives and transmits data.

UC ONLY

When you press this key, it locks into place and the uppercase alphabet replaces the lowercase alphabet. This key affects only alphabetic keys. When you press the key again, it unlocks and the machine prints the lowercase alphabet. Incoming data is not affected by the position of this key.

BREAK

When you press this switch, a break signal clears all data in the print buffer.

AUTO LF

Pressing AUTO LF and the RETURN key gives you a double line feed. You must have both AUTO LF and LOCAL LF set at ON for this to occur.

DEL

The DEL key, in remote mode, transmits the delete code instead of printing it. In the local mode, this key does not operate.

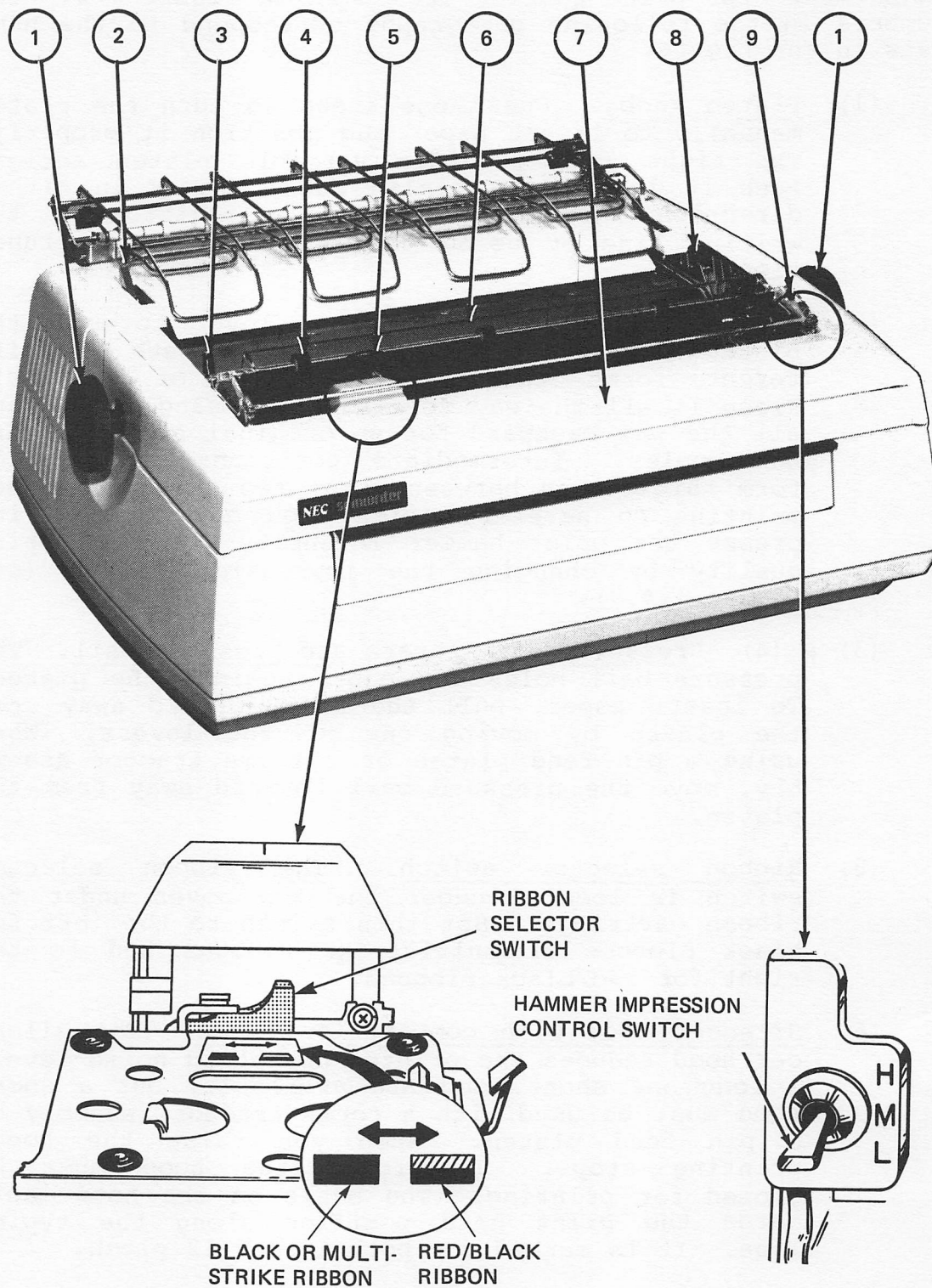
1.2.3 Numeric Section

The numeric pad (15-key pad) enters numeric data. Do not use the SHIFT, CTRL, or ESC keys when entering numerical data. To help you feel your position on the numeric pad, the number 5 has a raised key.

1.3 PAPER POSITIONING AND PRINTING ADJUSTMENTS

The controls you will use to position paper and to make adjustments for print quality are shown in Figure 1-4. The numbers in the following paragraphs correspond to the numbers in the figure.

- (1) Platen knobs. Use these knobs to turn the platen manually to insert paper and position it properly. The right knob provides variable platen action. Push it in and the platen rolls freely in either direction. You can change the position of the writing line by using this variable platen function.
- (2) Copy control lever. Use this lever to move the platen forward or backward to compensate for different forms thicknesses (number of carbons). Place it all the way forward for a single copy and all the way backward for an original and five carbon copies. Intermediate positions provide for form thicknesses between these two extremes. When printing on several copies, you may have to increase the print hammer intensity for best print quality by changing the impression switch (see Figure 1-4,9).
- (3) & (4) Pressure bail levers and pressure bail. The pressure bail holds the paper against the platen. To insert paper, pull the bail forward away from the platen by moving one of the levers. When using a pin feed platen or a forms tractor assembly, move the pressure bail forward away from the platen.
- (5) Ribbon selector switch. The ribbon selector switch is located under the top cover under the ribbon cartridge. Set this switch to the left for black ribbons or multistrike ribbons and to the right for red/black ribbons.
- (6) Silencer hood with combination scale. The silencer hood reduces the printer operating noise level. A long and short hood are available, but a short hood must be used with a forms tractor assembly or a pin feed platen. When you raise the hood, printing stops. Therefore, the hood must be closed for printing. The scale on the hood indicates the print head position along the typing line. It is marked for both 10 and 12 pitch.



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Figure 1-4 Printer Controls

- (7) Top cover. The top cover raises easily when lifted upward. It provides access to the printer mechanism for changing a ribbon cartridge, the print thimble, or the hammer impression control switch. When you raise the cover, printing stops. Therefore, be sure the cover is closed tightly for printing.
- (8) Paper release lever. In the forward position, this lever releases the tension on the paper, allowing you to reposition or remove the paper. Place the lever in the backward position when printing on a friction feed platen to ensure proper feeding of the paper. Place the lever forward when printing on a pin feed platen or when using a forms tractor assembly.
- (9) Impression control switch. This three-position switch located under the top cover controls the printing impression. Poor print quality may result from the incorrect setting of this switch. Too high an impression setting may reduce thimble life. Set this switch as follows:
- L - low for minimum impact pressure, required for small typefaces (12 pitch);
 - M - medium for normal impact pressure, required for most single copy printing; and
 - H - high for maximum impact pressure, normally only for multiple copies.

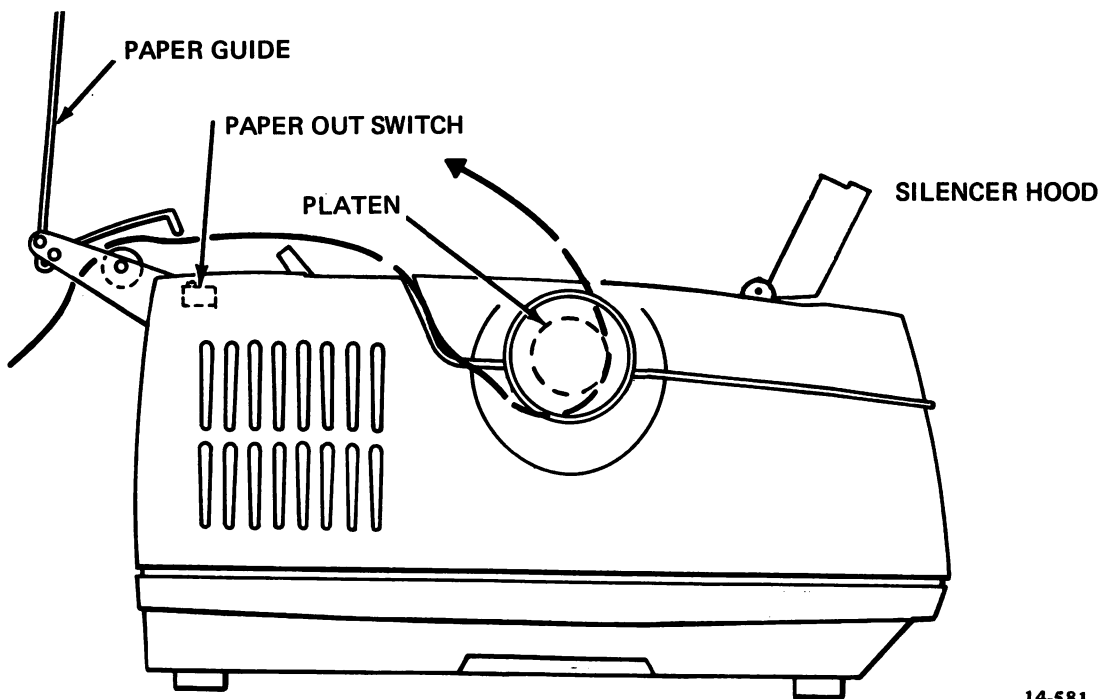
1.4 PAPER LOADING INSTRUCTIONS

The Spinwriter has three types of paper feed: friction feed, pin feed, and forms tractor paper feed. When loading paper, refer to the procedure that applies to the particular type of paper feed for your machine.

The rear feed paper path is shown in Figure 1-5. Rear feed is similar to paper placement in a typewriter. Figure 1-6 shows you how to load the paper through the bottom of the Spinwriter.

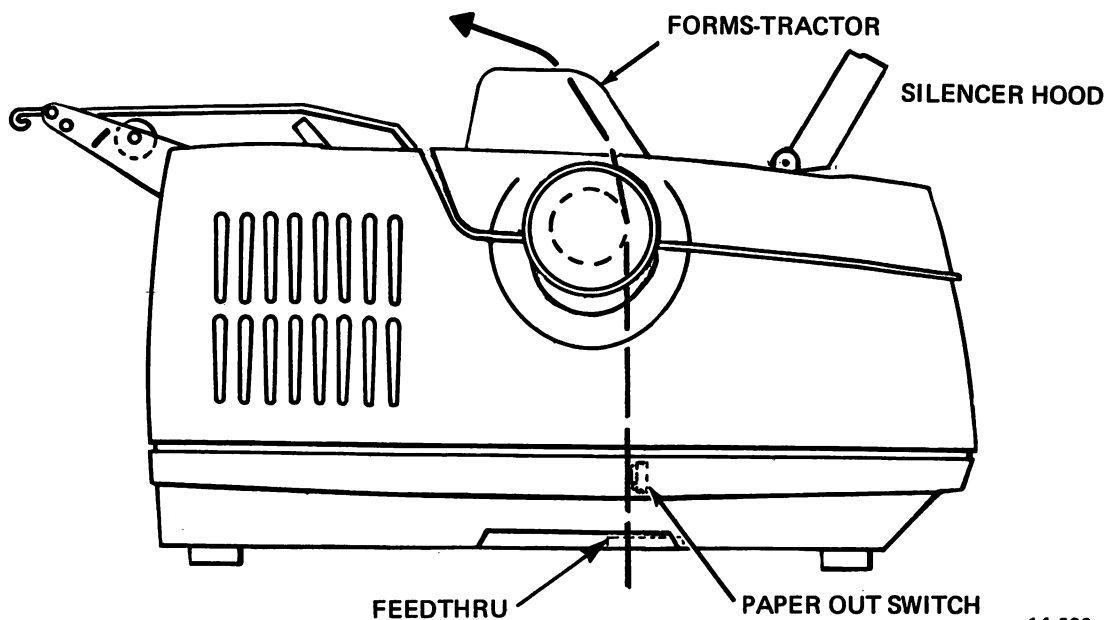
NOTE

If you use a single sheet of paper in the Spinwriter, raise the paper guide to deactivate the paper out switch.



14-581

Figure 1-5 Rear Feed Paper Path



14-582

Figure 1-6 Bottom Feed Paper Path

1.4.1 Friction Feed Paper Loading

Use this procedure to load paper into a Spinwriter with friction feed.

- a. Raise the paper guide and the silencer hood.
- b. Move the pressure bail away from the platen.
- c. Pull the paper release lever forward.
- d. Insert paper with the printing surface down (see Figure 1-6).
- e. Push the paper release lever backward.
- f. Turn the platen knob to move the paper.
- g. Pull the paper release lever forward.
- h. Align the paper horizontally and vertically.
- i. Push the paper release lever backward.
- j. Push the paper bail toward the platen.
- k. Move the paper to the top of form position you want. Push in the right platen knob and turn it for fine adjustment.
- l. Adjust the copy control lever. Place this lever forward for a single copy, and adjust it gradually backwards as the number of copies increases.
- m. Lower the paper guide and the silencer hood.

1.4.2 Pin Feed Paper Loading

Use this procedure to load paper into a Spinwriter with a pin feed platen.

- a. Raise the paper guide and the silencer hood.
- b. Move the pressure bail away from the platen.
- c. Pull the paper release lever forward. It must REMAIN in the FORWARD position.
- d. Release the paper cutter bail from the platen.
- e. Insert paper as shown in Figures 1-5 or 1-6.

- f. Align the paper feed holes with the left and right pin on the platen. Then lower the cutter bail to the platen.
- g. Pull the paper lightly toward the back to remove slack.
- h. Push in and turn the right platen knob to position the paper at the first line position.
- i. Lower the paper guide and the silencer hood.

1.4.3 Forms Tractor Paper Loading

Use this procedure to load paper into a Spinwriter with a forms tractor.

- a. Raise the paper guide if rear feed is used, and raise the silencer hood.
- b. Move the pressure bail away from the platen.
- c. Pull the paper release lever forward. It must REMAIN in the FORWARD position.
- d. Open the tractor doors.
- e. Insert paper as shown in Figures 1-5 or 1-6.
- f. Align the paper feed holes with the pins on the left and right tractor assemblies.
- g. Close the left tractor door.
- h. Align the right tractor with the paper feed holes. You may have to move the tractor assemblies to do this. Release the locking knobs and slide the assemblies to the position you want. Close the right tractor door.
- i. Push in and turn the right platen knob to position the paper to the first line position.
- j. Lower the paper guide and the silencer hood.

1.5 SPINWRITER PREPARATION

Use this procedure to prepare the Spinwriter for operation.

- a. Raise the top cover and check that the impression control switch (see Section 3.3.9) and the ribbon selector switch (see Section 3.3.5) are correctly set.
- b. Make sure the paper, ribbon, and print thimble are properly installed.
- c. Check to make sure that all front panel control switches are properly set (see Table 1-1).
- d. Close the top cover.
- e. Connect the power cord to an ac outlet.
- f. Set the POWER switch to ON and check that the POWER indicator lights and the carriage moves to the first print position.
- g. Set the LOCAL switch on the keyboard (if installed) to the position you want (see Table 1-1).

1.6 TYPICAL OPERATING PROCEDURES

To operate the Spinwriter in the local mode, press the LOCAL key.

To operate the Spinwriter in the remote mode, you must follow specific procedures. These procedures are determined by the host device with which the Spinwriter will communicate. To communicate between the Spinwriter and the host device, make sure the operating characteristics of both are compatible. You must set the transmission speed (baud rate), the type of data transmission (half or full duplex), and the type of parity (see Table 1-1). Set all Spinwriter control switches, other than the SP switch, before establishing a communication link (see Appendix A). Set the SP switch according to the type of printing thimble used.

CHAPTER 2

MAINTENANCE AND REPLACEMENT PROCEDURES

This chapter suggests ways to help you maintain high quality printing. It includes procedures for replacing ribbons, thimbles, and other assemblies. Also included is a troubleshooting guide to help you isolate and correct minor malfunctions.

2.1 MAINTAINING HIGH QUALITY PRINT

To ensure high print quality, you should give proper attention to the different printer control settings, paper quality, ribbon quality, and so on.

- Select the proper ribbon. Multistrike ribbons give you sharper impressions than fabric ribbons. Dried or malfunctioning ribbons result in faded print images.
- Choose high quality paper to obtain the sharpest characters and maximum black-and-white contrast.
- Select the proper copy control lever setting - all the way forward for a single copy and moved back as necessary for additional copies.
- Set the impression control switch correctly - low for small typefaces (12 pitch), medium for normal impact pressure, and high for large typefaces or multiple copies.
- Set the space pitch setting so that it matches the pitch of the thimble being used. A mismatch will give you cramped or widely spaced characters.
- Align the paper correctly with enough tension so that it does not tear or wrinkle.
- Keep the platen clean and free of marks and scratches.

2.2 RIBBON CARTRIDGE REPLACEMENT

Replace the fabric ribbon cartridge at intervals to maintain clear printing. Replace the multistrike ribbon cartridge when the ribbon fills the ribbon window to E and the ribbon has a yellow cross-hatch pattern (see Figure 2-1).

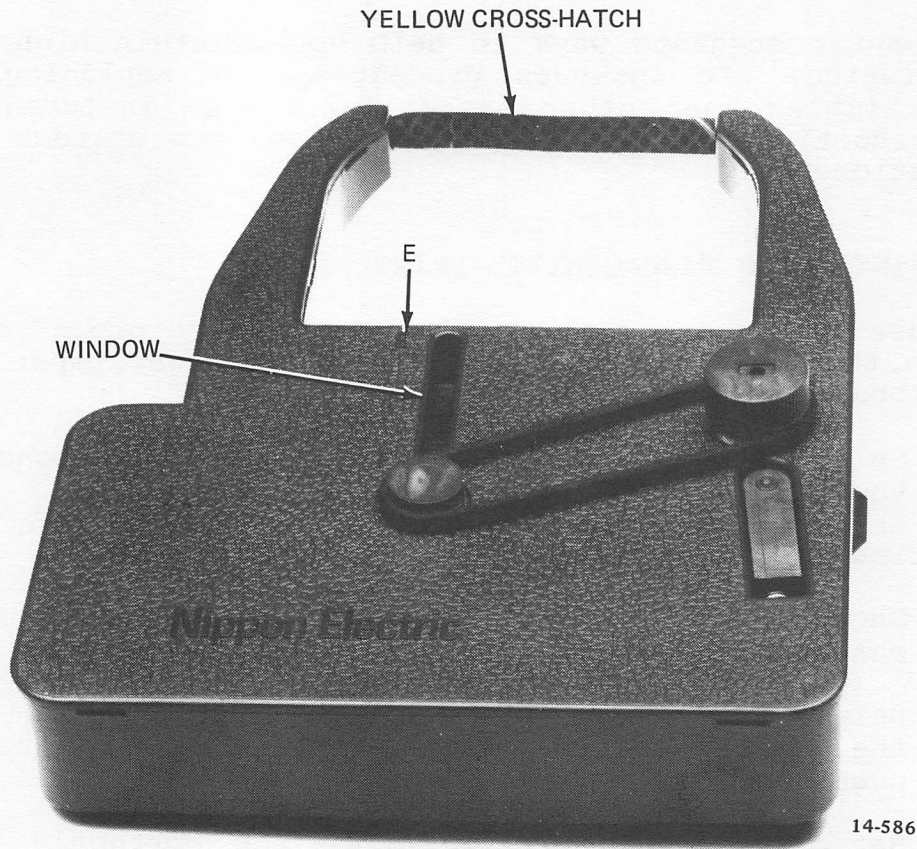


Figure 2-1 Multistrike Ribbon Cartridge End-of-Ribbon Indicators

Use this procedure to change the ribbon cartridge.

- a. Raise the top cover.
- b. Grasp the ribbon cartridge lightly and gently spread the two locking tabs that hold the cartridge in place. Lift the cartridge out (see Figure 2-2).
- c. Turn the manual feed knob on the new cartridge in the direction of the arrow to put some tension on the ribbon.

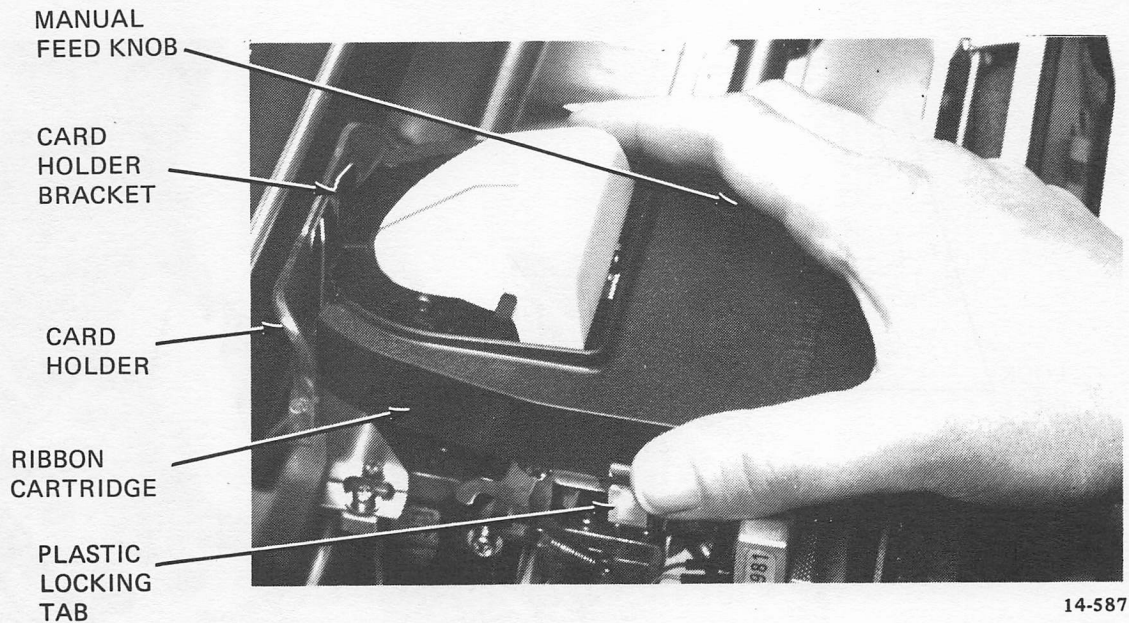


Figure 2-2 Ribbon Cartridge Removal

- d. Place the new ribbon cartridge over the mounting plate. Insert the ribbon between the card holder and the card holder bracket.
- e. If you are using a multistrike ribbon, insert the ribbon in the ribbon sensor (see Figure 2-3).
- f. Press the ribbon cartridge down until the locking tabs engage.

NOTE

It may be necessary to turn the manual feed knob in the direction of the arrow to ensure proper seating.

- g. Close the top cover.

2.3 PRINT THIMBLE REPLACEMENT

Use this procedure to replace the print thimble.

- a. Turn off the power and raise the top cover.
- b. Remove the ribbon cartridge.
- c. Push the hammer lock lever toward the platen and tilt the hammer cover toward the front of the Spinwriter (see Figure 2-3).

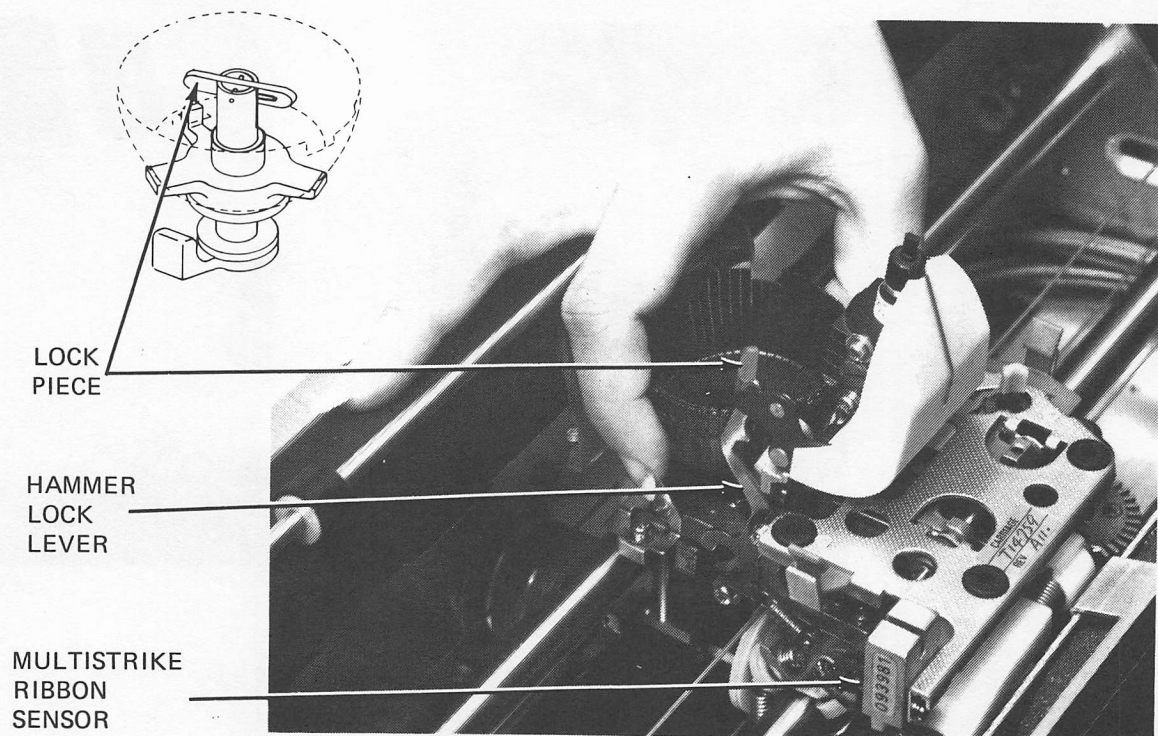


Figure 2-3 Print Thimble Removal

- d. Slide the lock piece, at the center of the print thimble, horizontally and then to the upright position.
- e. Lift the print thimble upward from the carriage.

NOTE

When handling the print thimble, hold it at the base to avoid possible damage to the character type areas.

- f. Place the new print thimble in position, aligning the square hole with the stud (see Figure 2-3A).

NOTE

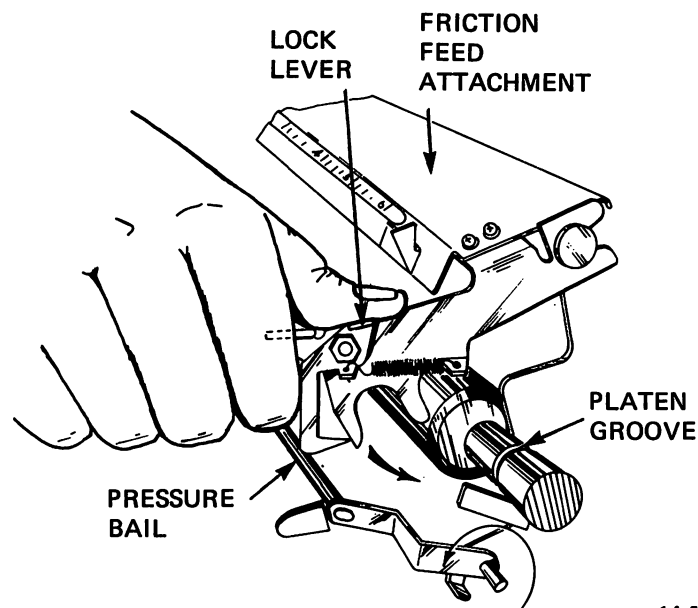
Use light pressure on the thimble to ensure that it is seated fully downward.

- g. Lay the lock piece flat and slide it into position (see Figure 2-3A).
- h. Push the hammer cover into the locked position.
- i. Install the ribbon cartridge.
- j. Close the top cover and restore ac power.

2.4 FRICTION FEED ASSEMBLY REMOVAL

If this option is installed, use this procedure to remove it.

- a. Turn off the power and raise the top cover.
- b. Move the pressure bail away from the platen.
- c. Press the lock levers and raise the assembly upward and toward the back of the printer as shown in Figure 2-4.
- d. Close the top cover and restore ac power.



14-589

Figure 2-4 Friction Feed Attachment Removal
(Right Side Only)

2.5 FORMS TRACTOR ASSEMBLY REMOVAL

If this option is installed, use this procedure to remove it.

- a. Turn off the power and raise the top cover.
- b. Move the pressure bail away from the platen.
- c. Press the locking levers and raise the assembly upward to remove it (see Figure 2-5).
- d. Close the top cover and restore ac power.

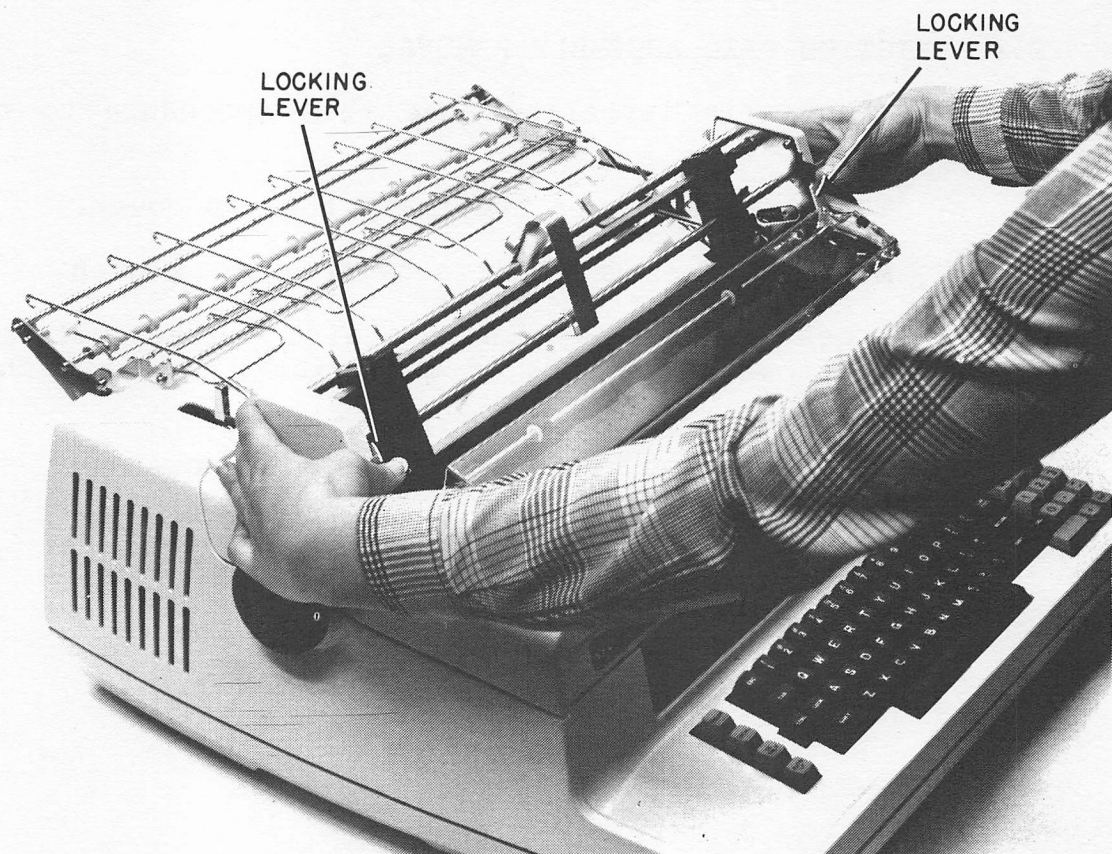


Figure 2-5 Forms Tractor Assembly Removal

2.6 PIN FEED PLATEN REMOVAL

If this option is installed, use this procedure to remove it.

- a. Turn off the power and raise the top cover.
- b. Move the pressure bail away from the platen.
- c. Press the locking tabs and lift the platen from the printer (see Figure 2-6).
- d. Insert the replacement platen by aligning the platen gear with the line feed idler gear. Press the platen down until it locks in place.
- e. Close the top cover and restore ac power.

2.7 FRICTION FEED PLATEN REMOVAL

Use this procedure to remove the friction platen.

- a. Turn off the power and raise the top cover.

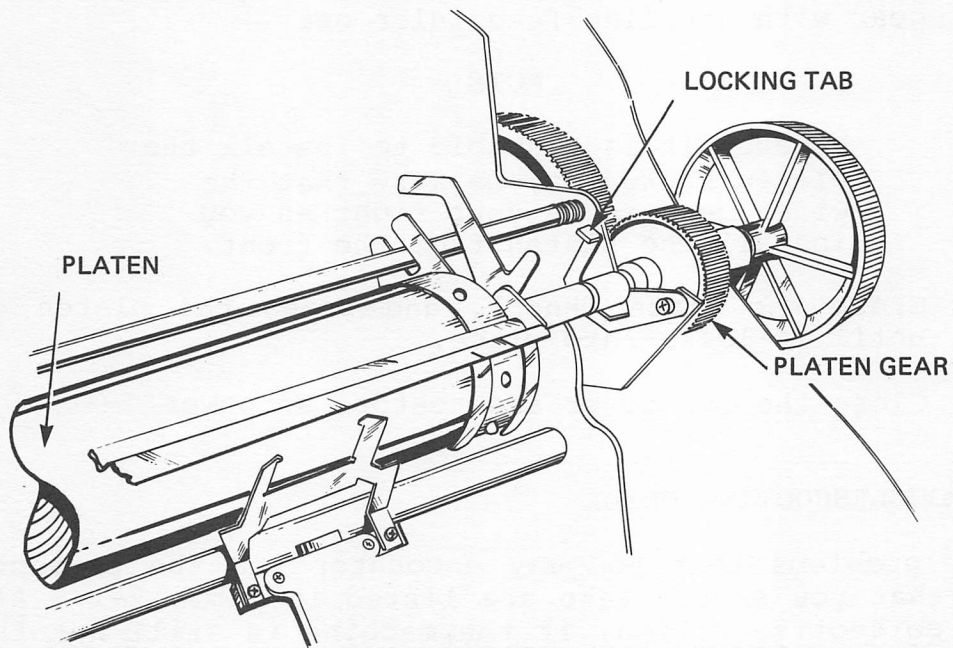
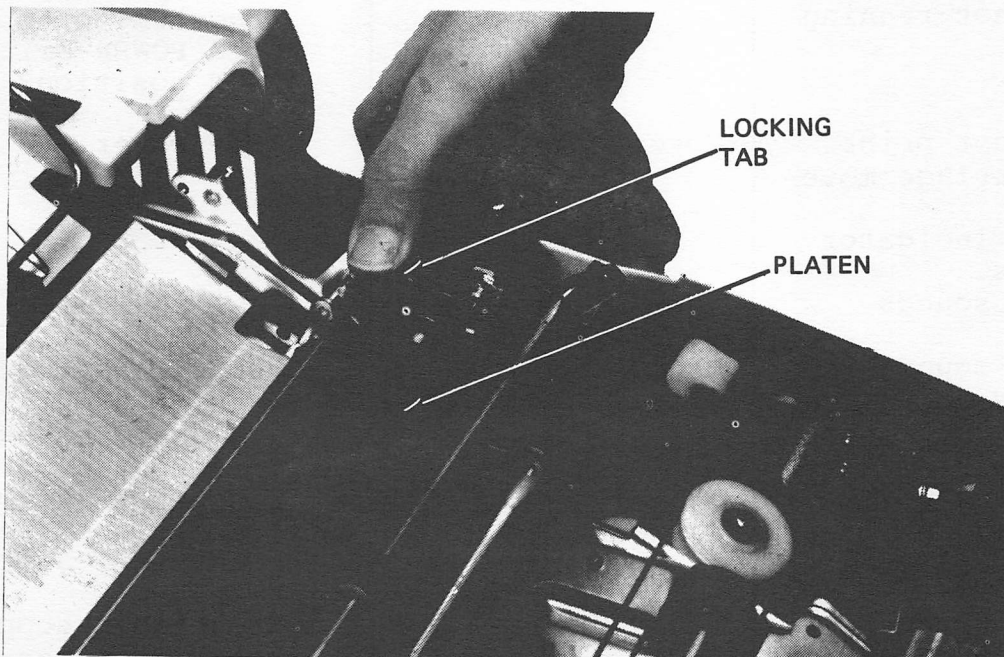


Figure 2-6 Pin Feed Platen Removal

- b. Remove the friction feed attachment or the forms tractor assembly if installed.
- c. Press the locking tabs and lift the platen upward out of the printer (see Figure 2-7).



14-591

Figure 2-7 Friction Feed Platen Removal

- d. Insert the replacement platen, aligning the platen gear with the line feed idler gear.

NOTE

Because it is possible to install the platen backwards, be sure that the wider gear is on your right as you install the platen from the front.

- e. Grasp the platen knobs, and press the platen down until it locks into place.
- f. Close the top cover and restore ac power.

2.8 TROUBLESHOOTING GUIDE

Several problems that you may encounter and the corrective action that you should take are listed in Table 2-1. After taking corrective action, if the machine is still not functioning properly, call your service representative.

Table 2-1 Troubleshooting Guide

PROBLEM INDICATION	CAUSE	CORRECTIVE ACTION
Does not print (Fan not running)	Power Source	1. Is Spinwriter connected to ac power? 2. Is POWER switch in ON position?
Does not print No carriage movement CHECK indicator lights Alarm sounds	Cover Open	Close cover.
Alarm sounds RIBBON and CHECK indicators light	Ribbon End	Check ribbon cartridge. If using a multistrike cartridge, check to see if ribbon is at end (window on the cartridge should be full). Press RESET switch.
Alarm sounds PAPER and CHECK indicators light	Paper Out	Check paper supply. Is paper loaded correctly? Press RESET switch.

Table 2-1 Troubleshooting Guide (cont'd)

PROBLEM INDICATION	CAUSE	CORRECTIVE ACTION
Carriage movement but does not print	Ribbon broken or not installed properly	Replace if necessary.
	Thimble broken or not installed properly	Are ribbon and thimble installed properly? Replace thimble if necessary.
Printing but no carriage movement Alarm may sound	Broken carriage cable Obstruction in path of carriage	Call Service Representative.
Paper tearing	Paper not loaded properly Obstruction in paper path If using forms tractors, too much tension may exist Paper release lever may be engaged.	Check paper loading. Adjust tractors. Check paper release lever.
Printing light or not sharp	Ribbon worn, jammed, or broken Ribbon or thimble not properly installed Copy control lever set incorrectly Impression switch set incorrectly Damaged platen or thimble	Replace if necessary. Check installation. Check position of copy control (see Section 1.3). Check switch setting. Inspect for marks or abrasions. Replace if necessary.
Remote Operations		
CHECK and DATA indicators light Alarm sounds	Parity or framing error	Check PARITY and SPEED switches for compatibility with host device. Press RESET.

Table 2-1 Troubleshooting Guide (cont'd)

PROBLEM INDICATION	CAUSE	CORRECTIVE ACTION
Remote Operations		
Does not print No carriage movement	No data input	Check host device.
CHECK indicator lights Alarm sounds	Buffer overflow	Check host device. Press RESET.

APPENDIX A

PRINTED CIRCUIT BOARDS SWITCH FUNCTIONS

This appendix contains information on the various switches found in the Models 7710, 7715, 7720, and 7725 Spinwriter. For information on the switches on the G9JHT or G9JHW PCBs, see Figures A-1 and A-2. For information on the many switches on the operator control panel, see Figure A-3.

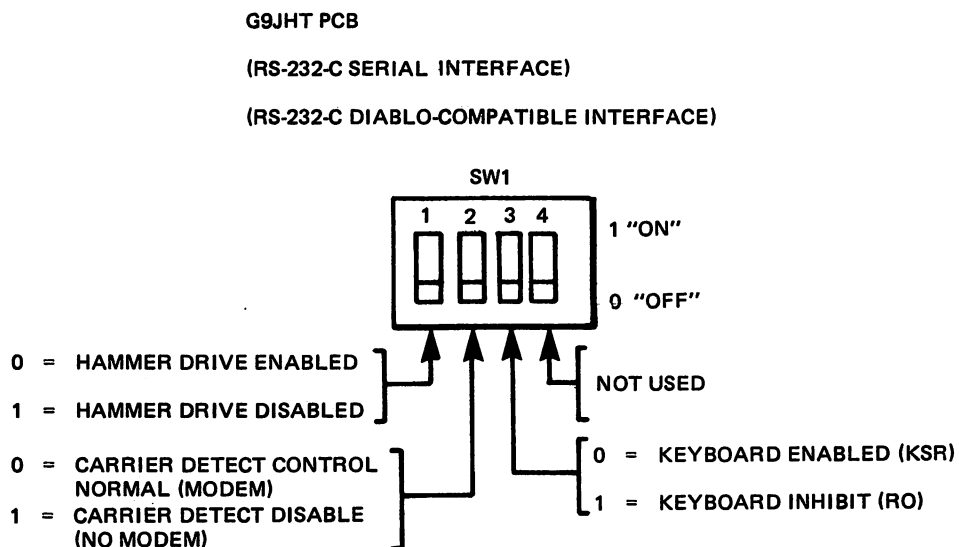


Figure A-1 Earlier Version for Models 7710 and 7715

G9JHW PCB

(RS-232-C SERIAL INTERFACE)

(RS-232-C DIABLO-COMPATIBLE INTERFACE)

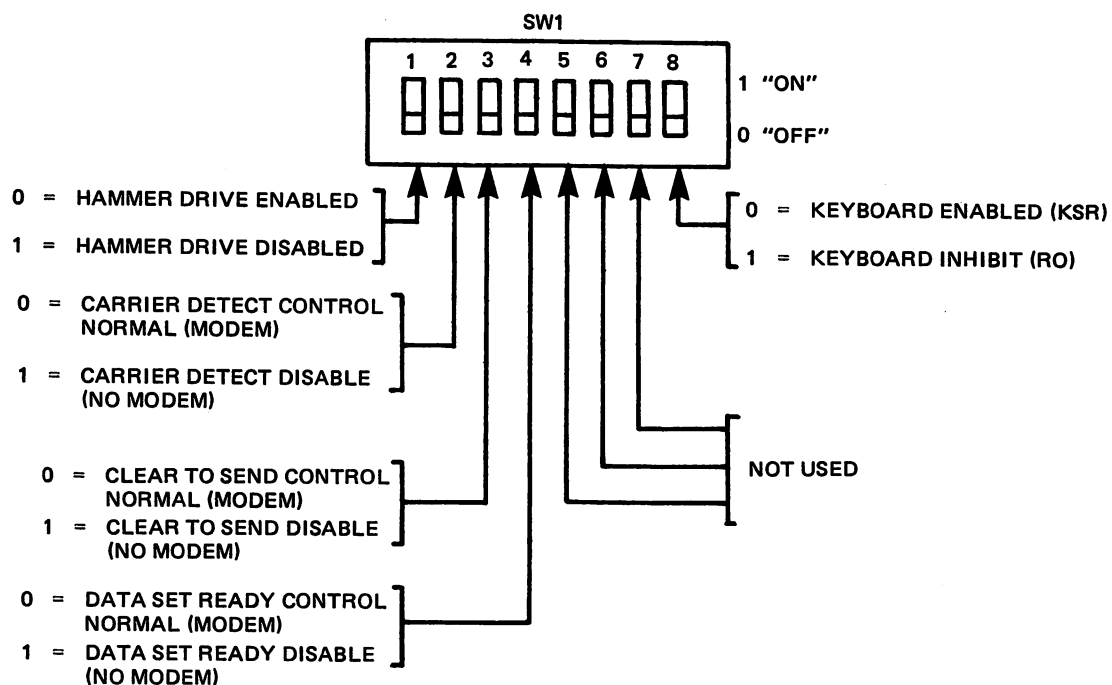


Figure A-2 Later and Standard Version for Models 7710,
7715, 7720, and 7725



Figure A-3 Operator Control Panel Switches

APPENDIX B ESCAPE SEQUENCES

This appendix contains tabular information on the following escape sequences.

- Models 7710 and 7720 Escape Key Functions - Table B-1
- Models 7715 and 7725 Escape Key Functions - Table B-2
- Models 7710 and 7720 Absolute Horizontal Tab - Table B-3
- Models 7710 and 7720 Relative Vertical Tab - Table B-4
- Spacing and Forms Advance Control - Table B-5
- Models 7715 and 7725 Motion Index - Table B-6
- Models 7715 and 7725 Tab Index - Table B-7

For an ASCII Coding Chart, see Table B-8.

Table B-1 Models 7710 and 7720 Escape Key Functions

KEYS	ESCAPE SEQUENCE
ESC 1	Set Horizontal Tab
ESC 2	Clear Horizontal Tab Stop (Individual)
ESC 3	Print in Red
ESC 4	Print in Black
ESC 5	Set Vertical Tab Stop
ESC 6	Reset Vertical Tab Stop (Individual)
ESC 7	Clear All Horizontal and Vertical Tabs and FF Length
ESC 9	Reverse Line Feed
ESC E	Enter Program Mode
ESC G	Exit Program Mode
ESC J or j	Set Right Margin
ESC K or k	Reset Right Margin
ESC L or l	Set FF Length
ESC M or m	Set Left Margin
ESC O or o	Reset Left Margin
ESC >	Forward Printing

Table B-1 Models 7710 and 7720 Escape Key Functions
(cont'd)

KEYS	ESCAPE SEQUENCE
ESC =	Read and Store Switch Settings
ESC <	Reverse Printing
ESC ?	Set Format Mode
ESC @ or	Reset Format Mode
ESC . (period)	Graphic Mode On (Clear by C _R)
ESC /	Graphic Mode Off
ESC :	Half Line Feed
ESC ;	Half Negative Line Feed
ESC (Δ	Auto Bidirectional Print Enable
ESC)Δ	Auto Bidirectional Print Disable
ESC AΔΔ	Twin Feeder Hopper 1
ESC BΔΔ	Twin Feeder Hopper 2
ESC \ EΔΔ	Twin Feeder Insert/Eject
ESC \ FΔΔ	Twin Feeder Eject
ESC *	Auto Bold Print On (Clear by C _R)
ESC +	Auto Shadow Print On (Clear by C _R)
ESC ,	Auto Bold//Shadow Off
ESC - (minus)	Auto Underscore On
ESC ' (apostrophe)	Auto Underscore Off
ESC &	Cancel all WP Modes
ΔG9JHX PCB must be installed. ΔΔTwin Feeder must be installed.	

Examples:

To set the left margin, press the following keys in this order:

- 1st key ESC
- 2nd key M (or m)

You can set FORM FEED (FF) length from the keyboard or from a remote location by using the ESC keys as follows:

- 1. ESC L (or l)
- 2. ESC ?

These actions load the number of line feeds into the machine for FF length and Format Mode. Additional ESC key functions reset machine as follows:

- 3. ESC L (sets new FF length)
- 4. ESC @ or ' (resets Format mode)

The new FF count will continue to be used until you change FF by any of the following actions:

1. PWR OFF
2. CLEAR
3. ESC L (or 1)
4. ESC 7

Table B-2 Models 7715 and 7725 Escape Key Functions

CODE	FUNCTION
ESC 1	Set Horizontal Tab Stop
ESC 2	Clear All Tab Stops
ESC 3	Graphics On
ESC 4	Graphics Off
ESC 5	Forward Print On
ESC 6	Backward Print On
ESC 8	Clear Individual Tab Stop
ESC 9	Set Left Margin
ESC 0	Set Right Margin
ESC A	Print in Red
ESC B	Print in Black
ESC D	Negative Half-Line Feed
ESC U	Half-Line Feed
ESC LF	Negative Line Feed
ESC HT (n)	Absolute Horizontal Tab
ESC VT (n)	Absolute Vertical Tab
ESC RS (n)	Define Vertical Motion Index (VMI)
ESC US (n)	Define Horizontal Motion Index (HMI)
ESC SO M	Enter Program Mode
ESC SI	Exit Program Mode
ESC /Δ	Auto Bidirectional Print Enable
ESC \Δ	Auto Bidirectional Print Disable
ESC DC4 A ΔΔ	Twin Feeder Hopper 1
ESC DC4 B ΔΔ	Twin Feeder Hopper 2
ESC DC4 C ΔΔ	Twin Feeder Insert/Eject
ESC DC4 D ΔΔ	Twin Feeder Eject
ESC O	Auto Bold Print On (clear by C _R)
ESC W	Auto Shadow Print On (clear by C _R)
ESC &	Auto Bold/Shadow Print Off
ESC E	Auto Underscore On
ESC R	Auto Underscore Off
ESC X	Cancel All WP Modes
Δ G9JHX PCB must be installed. ΔΔ Twin Feeder must be installed.	

1. To set the left margin, press the following keys in this order:

First key ESC
Second key 9

2. To set absolute vertical tab at 52, use the following 3-key ESC sequence.

First key ESC
Second key CTRL with K (specifies vertical tab;
see Table B-8)
Third key 5 (see Table B-7)

3. To set absolute horizontal tab at 65, use the following 3-key ESC sequence.

First key ESC
Second key CTRL with I (specifies horizontal tab;
see Table B-8)
Third key B (see Table B-7)

4. To change spacing between characters (HMI) and between lines (VMI), press the ESC key, the CTRL key and another key at the same time (see Table B-8) and the wanted setting (see Table B-6).

To set HMI at 10, press the following keys in this order:

First key ESC
Second keys CTRL,
SHIFT, and _ (see Table B-8)
Third keys CTRL K (see Table B-6)

5. To set VMI at 53, press the following keys in this order:

First key ESC
Second keys CTRL,
SHIFT, and + (see Table B-8)
Third key 6 (see Table B-6)

6. To set graphics, use the ESC 3 key; to reset, use ESC 4.

While in the graphics mode, carriage movement is completely separated from printing; that is, printing a character does not automatically move the carriage. The carriage is moved only by executing a tab, space, carriage return, or back space operation.

The tab commands operate the same as they do in normal mode. In graphics mode, however, the space and back space commands move the carriage only 1/60th of an inch instead of the horizontal index selected.

Paper movement commands can be used extensively in graphics. Vertical Tab (VT) and Form Feed (FF) operations are unchanged, but Line Feed (LF) and Negative Line Feed (ESC LF) cause only 1/48th of an inch of paper movement instead of the full line (VMI) movement performed in normal mode.

Table B-3 Models 7710 and 7720 Absolute Horizontal Tab

1st	ESC										
2nd	P		Q		R		S		T		U
3rd	@ 1	P 17	@ 33	P 49	@ 65	P 81	@ 97	P 113	@ 129	P 145	@ 161
	A 2	Q 18	A 34	Q 50	A 66	Q 82	A 98	Q 114	A 130	Q 146	A 162
	B 3	R 19	B 35	R 51	B 67	R 83	B 99	R 115	B 131	R 147	B 163
	C 4	S 20	C 36	S 52	C 68	S 84	C 100	S 116	C 132	S 148	
	D 5	T 21	D 37	T 53	D 69	T 85	D 101	T 117	D 133	T 149	
	E 6	U 22	E 38	U 54	E 70	U 86	E 102	U 118	E 134	U 150	
	F 7	V 23	F 39	V 55	F 71	V 87	F 103	V 119	F 135	V 151	
	G 8	W 24	G 40	W 56	G 72	W 88	G 104	W 120	G 136	W 152	
	H 9	X 25	H 41	X 57	H 73	X 89	H 105	X 121	H 137	X 153	
	I 10	Y 26	I 42	Y 58	I 74	Y 90	I 106	Y 122	I 138	Y 154	
	J 11	Z 27	J 43	Z 59	J 75	Z 91	J 107	Z 123	J 139	Z 155	
	K 12	[28	K 44	[60	K 76	[92	K 108	[124	K 140	[156	
	L 13	\ 29	L 45	\ 61	L 77	\ 93	L 109	\ 125	L 141	\ 157	
	M 14	] 30	M 46	] 62	M 78	] 94	M 110	] 126	M 142	] 158	
	N 15	^ 31	N 47	^ 63	N 79	^ 95	N 111	^ 127	N 143	^ 159	
	O 16	- 32	O 48	- 64	O 80	- 96	O 112	- 128	O 144	- 160	

CHARACTER KEY



TAB POSITION

Table B-4 Models 7710 and 7720 Relative Vertical Tab

	Reverse				Forward			
	ESC				ESC			
1st	ESC				ESC			
2nd	X		Y		Z		[	
3rd	@	P	@	P	@	P	@	P
	0	16	32	48	0	16	32	48
	A	Q	A	Q	A	Q	A	Q
	1	17	33	49	1	17	33	49
	B	R	B	R	B	R	B	R
	2	18	34	50	2	18	34	50
	C	S	C	S	C	S	C	S
	3	19	35	51	3	19	35	51
	D	T	D	T	D	T	D	T
	4	20	36	52	4	20	36	52
	E	U	E	U	E	U	E	U
	5	21	37	53	5	21	37	53
	F	V	F	V	F	V	F	V
	6	22	38	54	6	22	38	54
	G	W	G	W	G	W	G	W
	7	23	39	55	7	23	39	55
	H	X	H	X	H	X	H	X
	8	24	40	56	8	24	40	56
	I	Y	I	Y	I	Y	I	Y
	9	25	41	57	9	25	41	57
	J	Z	J	Z	J	Z	J	Z
	10	26	42	58	10	26	42	58
	K	[	K	[	K	[	K	[
	11	27	43	59	11	27	43	59
	L	\	L	\	L	\	L	\
	12	28	44	60	12	28	44	60
	M	]	M	]	M	]	M	]
	13	29	45	61	13	29	45	61
	N	^	N	^	N	^	N	^
	14	30	46	62	14	30	46	62
	O	-	O	-	O	-	O	-
	15	31	47	63	15	31	47	63

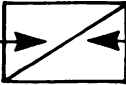
CHARACTER KEY  TAB POSITION

Table B-5 Spacing and Forms Advance Control

1st	2nd	Spacing		Form Advance	
		3rd	(inches)	3rd	(inches)
ESC	]	@	0	P	1/48
		A	1/120	Q	2/48
		B	2/120	R	3/48
		C	3/120	S	4/48
		D	4/120	T	5/48
		E	5/120	U	6/48 (1/8)
		F	6/120	V	7/48
		G	7/120	W	8/48 (1/6)
		H	8/120	X	9/48
		I	9/120	Y	10/48
		J	10/120 (1/12)	Z	11/48
		K	11/120	[	12/48
		L	12/120 (1/10)	\	13/48
		M	13/120	]	14/48
		N	14/120	^	15/48
		O	15/120	—	16/48

Table B-6 Models 7715 and 7725 Motion Index

1st	ESC											
2nd	Vertical Motion Index (VMI) RS						Horizontal Motion Index (HMI) US					
3rd	0	13	26	39	52	65	78	91	104	117		
	SOH	SO	ESC	(	5	B	O	\	i	v		
	1	14	27	40	53	66	79	92	105	118	w	
	STX	SI	FS	)	6	C	P		j			
	2	15	28	41	54	67	80	93	106	119	x	
	ETX	DLE	GS	*	7	D	Q	^	k			
	3	16	29	42	55	68	81	94	107	120	y	
	EOT	DC1	RS	+	8	E	R	-	l			
	4	17	30	43	56	69	82	95	108	121	z	
	ENQ	DC2	US	.	9	F	S	.	m			
	5	18	31	44	57	70	83	96	109	122	}	
	ACK	DC3	SP	-		G	T	a	n			
	6	19	32	45	58	71	84	97	110	123		
	BEL	DC4	!			H	U	b	o			
	7	20	33	46	59	72	85	98	111	124	!	
	BS	NAK	"	/	<	I	V	c	p			
	8	21	34	47	60	73	86	99	112	125	i	
	HT	SYN	#	0	=	J	W	d	q			
	9	22	35	48	61	74	87	100	113			
	LF	ETB	\$	1	>	K	X	e	r			
	10	23	36	49	62	75	88	101	114	s		
	VT	CAN	%	2	?	L	Y	f				
	11	24	37	50	63	76	89	102	115			
	FF	EM	&	3	@	M	Z	g	t			
	12	25	38	51	64	77	90	103	118	u		
	CR	SUB		4	A	N		h				

Table B-7 Models 7715 and 7725 Tab Index

1st	ESC												
2nd	Absolute Horizontal Tab HT						Absolute Vertical Tab VT						
3rd	1	14	27	40	53	66	79	92	105	118			
	SOH	SO	ESC	(	5	B	O	\	i	v			
	2	15	28	41	54	67	80	93	106	119	w		
	STX	SI	FS	)	6	C	P	]	j				
	3	16	29	42	55	68	81	94	107	120	x		
	ETX	DLE	GS	*	7	D	Q	^	k				
	4	17	30	43	56	69	82	95	108	121	y		
	EOT	DC1	RS	+	8	E	R	-	l				
	5	18	31	44	57	70	83	96	109	122	z		
	ENQ	DC2	US	.	9	F	S	'	m				
	6	19	32	45	58	71	84	97	110	123	}		
	ACK	DC3	SP	-	:	G	T	a	n				
	7	20	33	46	59	72	85	98	111	124			
	BEL	DC4	!	.	:	H	U	b	o				
	8	21	34	47	60	73	86	99	112	125	/		
	BS	NAK	"	/	<	I	V	c	p				
	9	22	35	48	61	74	87	100	113	126	!		
	HT	SYN	#	0	=	J	W	d	q				
	10	23	36	49	62	75	88	101	114				
	LF	ETB	\$	1	>	K	X	e	r				
	11	24	37	50	63	76	89	102	115				
	VT	CAN	%	2	?	L	Y	f	s				
	12	25	38	51	64	77	90	103	116				
	FF	EM	&	3	@	M	Z	g	t				
	13	26	39	52	65	78	91	104	117				
	CR	SUB		4	A	N	[	h	u				

Table B-8 ASCII Coding Chart

CONTROL MODE	ASCII CODE	UNSHIFTED MODE	ASCII CODE (HEXADECIMAL)	SHIFTED MODE	ASCII CODE
NUL	00	NUL	00	NUL	00
ESC	1B	ESC	1B	ESC	1B
NUL	00	1	31	!	21
NUL	00	2	32	@	40
NUL	00	3	33	#	23
NUL	00	4	34	\$	24
NUL	00	5	35	%	25
NUL	00	6	36	^	5E
NUL	00	7	37	&	26
NUL	00	8	38	*	2A
{	7B	9	39	(	28
}	7D	0	30	)	29
US	1F	-	2D	+	5F
RS	1E	=	3D	=	2B
GS	1D	`	60	`	7E
BS	08	BS	08	BS	08
NUL	00	NUL	00	NUL	00
HT	09	HT	09	HT	09
DC1	11	q	71	Q	51
ETB	17	w	77	W	57
ENQ	05	e	65	E	45
DC2	12	r	72	R	52
DC4	14	t	74	T	54
EM	19	y	79	Y	59
NAK	15	u	75	U	55
HT	09	i	69	I	49
SI	0F	o	6F	O	4F
DLE	10	p	70	P	50
ESC	1B	[	5B	]	5D
FS	1C	\	5C		7C
LF	0A	LF	0A	LF	0A
		CTRL LOCK			
SOH	01	a	61	A	41
DC3	13	s	73	S	53
EOT	04	d	64	D	44
ACK	06	f	66	F	46
BEL	07	g	67	G	47
BS	08	h	68	H	48
LF	0A	j	6A	J	4A
VT	0B	k	6B	K	4B
FF	0C	l	6C	L	4C
;	3B	;	3B	:	3A
'	27	'	27	"	22
GS	1D	{	7B	}	7D
CR	0D	CR	0D	CR	0D
		CTRL Function SHIFT			
SUB	1A	z	7A	Z	5A
CAN	18	x	78	X	58
ETX	03	c	63	C	43
SYN	16	v	76	V	56
STX	02	b	62	B	42
SO	0E	n	6E	N	4E
CR	0D	m	6D	M	4D
,	2C	,	2C	<	3C
.	2E	.	2E	>	3E
/	2F	/	2F	?	3F

APPENDIX C CONTROL CODES

The Spinwriter recognizes and processes the control codes of the ASCII control code set listed in Table C-1.

Table C-1 Control Codes for ASCII Control Code Set

CODE	MEANING
ETX	End
ACK	Acknowledge
BEL	Bell (Sound Audible Alarm)
BS	Back Space
HT	Horizontal Tab
LF	Line Feed
VT	Vertical Tab
FF	Form Feed
CR	Carriage Return
SO	Shift Out
SI	Shift In
DC1	Device Control 1 (X-ON)
DC3	Device Control 3 (X-OFF)
ESC	Escape

All of the control codes in the ASCII code set are listed in Table C-2. Generate the codes by pressing and holding down the CTRL key and then pressing the second key for the code wanted.

Table C-2 contains a "Key Position" column. This position is a physical locator for each key. For example, key position 34 is the A-key as shown in Figure C-1.

Table C-2 Control Codes

CONTROL CODE		PRESS KEYS		KEY POSITION
		SHIFTED ^Δ	UNSHIFTED ^Δ	
ESC	CTRL	ESC	ESC	2
NUL	CTRL	!	1	3
NUL	CTRL	@	2	4
NUL	CTRL	#	3	5
NUL	CTRL	\$	4	6
NUL	CTRL	%	5	7
NUL	CTRL		6	8
NUL	CTRL	&	7	9
NUL	CTRL	*	8	10
	CTRL	(	9	11
	CTRL	)	0	12
US	CTRL	underline	- dash	13
RS	CTRL	+	=	14
GS	CTRL	~	,`	15
BS	CTRL	BS	BS	16
HT	CTRL	HT	HT	18
DC1	CTRL	Q	q	19
ETB	CTRL	W	w	20
ENQ	CTRL	E	e	21
DC2	CTRL	R	r	22
DC4	CTRL	T	t	23
EM	CTRL	Y	y	24
NAK	CTRL	U	u	25
HT	CTRL	I	i	26
SI	CTRL	O	o	27
DLE	CTRL	P	p	28
ESC	CTRL	]	[	29
FS	CTRL		\	30
LF	CTRL	LF	LF	31
	CTRL		CTRL	32
	CTRL		LOCK	33
SOH	CTRL	A	a	34
DC3	CTRL	S	s	35
EOT	CTRL	D	d	36
ACK	CTRL	F	f	37
BEL	CTRL	G	g	38
BS	CTRL	H	h	39
LF	CTRL	J	j	40
VT	CTRL	K	k	41
FF	CTRL	L	l	42
;	CTRL	:	;	43
'	CTRL	"	'	44
CR	CTRL	CR	CR	46
	CTRL		SHIFT	49

Table C-2 Control Codes (cont'd)

CONTROL CODE		PRESS KEYS		KEY POSITION
		SHIFTED ^Δ	UNSHIFTED ^Δ	
SUB	CTRL	Z	z	50
CAN	CTRL	X	x	51
ETX	CTRL	C	c	52
SYN	CTRL	V	v	53
STX	CTRL	B	b	54
SO	CTRL	N	n	55
CR	CTRL	M	m	56
'	CTRL	<	'	57
.	CTRL	>	.	58
/	CTRL	?	/	59
	CTRL		SHIFT	60
DEL	CTRL	DEL	DEL	62
SP	CTRL	SP	SP	63
7	CTRL	7	7	64
8	CTRL	8	8	65
9	CTRL	9	9	66
4	CTRL	4	4	67
5	CTRL	5	5	68
6	CTRL	6	6	69
1	CTRL	1	1	70
2	CTRL	2	2	71
3	CTRL	3	3	72
0	CTRL	0	0	73
.	CTRL	.	.	74
-	CTRL	-	-	75
SP	CTRL	SP	SP	77
'	CTRL	'	'	78
HT	CTRL	HT	HT	79

^ΔRefers to position of SHIFT key; pressed down (shifted) or up (unshifted).

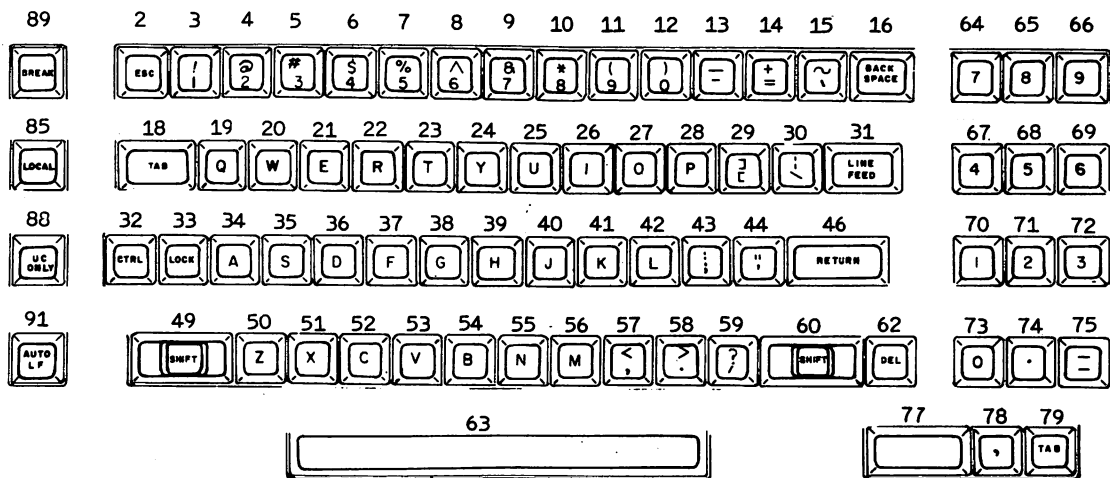


Figure C-1 Key Positions on Keyboard

APPENDIX D

FEDERAL COMMUNICATIONS COMMISSION WARNING

The following warning is required for all computing devices by FCC regulations.

WARNING

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

USER'S COMMENTS FORM

Document: Spinwriter 7700 Terminals Operator's Guide

Document No.: 819-000062-7002

Please suggest improvements to this manual.

Please list any errors in this manual. Specify by page.

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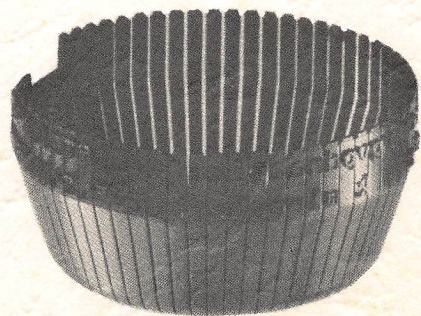
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